(19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 14 July 2005 (14.07.2005)

PCT

(10) International Publication Number WO 2005/063727 A1

(51) International Patent Classification⁷: C07D 307/68

(21) International Application Number:

PCT/KR2004/003435

(22) International Filing Date:

24 December 2004 (24.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 10-2003-0098027

27 December 2003 (27.12.2003) KR

- (71) Applicants (for all designated States except US): KO-REA RESEARCH INSTITUTE OF CHEMICAL TECHNOLOGY [KR/KR]; 100 Jang-dong Yusung-ku, Taejeon-si 305-343 (KR). YUYU INC. [KR/KR]; 212 Suksoo-dong Manan-ku Anyang-si, Kyungki-do 430-040 (KR).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): YI, Kyu Yang [KR/KR]; #130-1001 Hanbit Apt. Oun-dong Yusung-ku, Taejeon-si 305-755 (KR). LEE, Sun Kyung [KR/KR]; #108-1303 Daelimdure Apt. Sinseong-dong Yusung-ku, Taejeon-si 305-720 (KR). KIM, Nak Jeong [KR/KR]; #102-701 Hanul Apt. Sinseong-dong Yusung-ku, Taejeon-si 305-345 (KR). SUH, Jee Hee [KR/KR]; #116-802 Hanbit Apt. Oun-dong Yusung-ku, Taejeon-si 305-755 (KR). HWANG, Soon Hee [KR/KR]; #215-1502 Saemmeori Apt. Dunsan-dong Seo-ku, Taejeon-si 302-120 (KR). LEE, Byung Ho [KR/KR]; #116-804 Hanbit Apt. Oun-dong Yusung-ku, Taejeon-si 305-755 (KR). SEO, Ho Won [KR/KR]; #104-1402 Taepyeong Apt.

Taepyeong-dong Jung-ku, Taejeon-si 301-150 (KR). HWANG, Sun Kyung [KR/KR]; #107-1002 Hanaro Apt. Wolpyeong-dong Seo-ku, Taejeon-si 302-280 (KR). YOO, Sung Eun [KR/KR]; 314-16 Geumam-ri Janggi-myeon Gongju-si, Chungcheongnam-do 314-911 (KR). LEE, Kyung Hee [KR/KR]; #106-601 Saetbyeol Life Apt. Bundang-dong Bundang-ku Sungnam-si, Kyungki-do 463-748 (KR).

- (74) Agent: LEE, Won-Hee; 8th Fl. Sung-ji Heights II 642-16 Yoksam-dong Kangnam-ku, Seoul 135-080 (KR).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: FURANCARBONYLGUANIDINE DERIVATIVES, THEIR PREPARATION AND PHARMACEUTICAL COMPOSITIONS CONTAINING THEM

(57) Abstract: The present invention relates to furancarbonylguanidine derivatives, a preparation method thereof and a pharmaceutical composition comprising the same. Furancarbonylguanidine derivatives of the present invention inhibit NHE-1 (sodium-hydrogen exchanger isoform 1), which helps recovery of heart function damaged from ischemia/reperfusion and decreases myocardial infarction rate, indicating that they have protective effect on myocardial cells. Thus, furancarbonylguanidine derivatives of the present invention can be effectively used for the prevention and the treatment of ischemic heart diseases such as myocardial infarction, arrhythmia, angina pectoris, etc, and also a promising candidate for a heart protecting agent applied to reperfusion therapy including thrombolytics or cardiac surgery including coronary artery bypass graft, percutaneous transluminal coronary angioplasty, etc.

